

YAMAHA

R-V1 103

Natural Sound AV Receiver

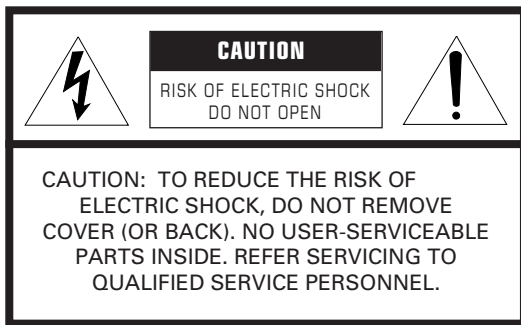
Récepteur audiovisuel “Son Naturel”

Thank you for selecting this YAMAHA AV receiver.

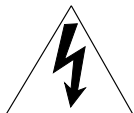
Nous vous remercions d'avoir porté votre choix sur ce récepteur audiovisuel YAMAHA.

**OWNER'S MANUAL
MODE D'EMPLOI**

SAFETY INSTRUCTIONS



• Explanation of Graphical Symbols




The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

- 1** Read Instructions – All the safety and operating instructions should be read before the unit is operated.
 - 2** Retain Instructions – The safety and operating instructions should be retained for future reference.
 - 3** Heed Warnings – All warnings on the unit and in the operating instructions should be adhered to.
 - 4** Follow Instructions – All operating and other instructions should be followed.
 - 5** Water and Moisture – The unit should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
 - 6** Carts and Stands – The unit should be used only with a cart or stand that is recommended by the manufacturer.
 - 6A** A unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart combination to overturn.
- 
- A circular warning symbol with a diagonal line through it. Inside the circle, there is an illustration of a person pushing a cart with a unit on it, and the symbol indicates that this action is prohibited or should be done with caution.
- 7** Wall or Ceiling Mounting – The unit should be mounted to a wall or ceiling only as recommended by the manufacturer.
- 8** Ventilation – The unit should be situated so that its location or position does not interfere with its proper ventilation. For example, the unit should not be situated on a bed, sofa, rug, or similar surface, that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
- 9** Heat – The unit should be situated away from heat sources such as radiators, stoves, or other appliances that produce heat.
- 10** Power Sources – The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the unit.
- 11** Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- 12** Cleaning – The unit should be cleaned only as recommended by the manufacturer.
- 13** Nonuse Periods – The power cord of the unit should be unplugged from the outlet when left unused for a long period of time.
- 14** Object and Liquid Entry – Care should be taken so that objects do not fall into and liquids are not spilled into the inside of the unit.
- 15** Damage Requiring Service – The unit should be serviced by qualified service personnel when:
 - A.** The power-supply cord or the plug has been damaged; or
 - B.** Objects have fallen, or liquid has been spilled into the unit; or
 - C.** The unit has been exposed to rain; or
 - D.** The unit does not appear to operate normally or exhibits a marked change in performance; or
 - E.** The unit has been dropped, or the cabinet damaged.
- 16** Servicing – The user should not attempt to service the unit beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.
- 17** Power Lines – An outdoor antenna should be located away from power lines.
- 18** Grounding or Polarization – Precautions should be taken so that the grounding or polarization is not defeated.

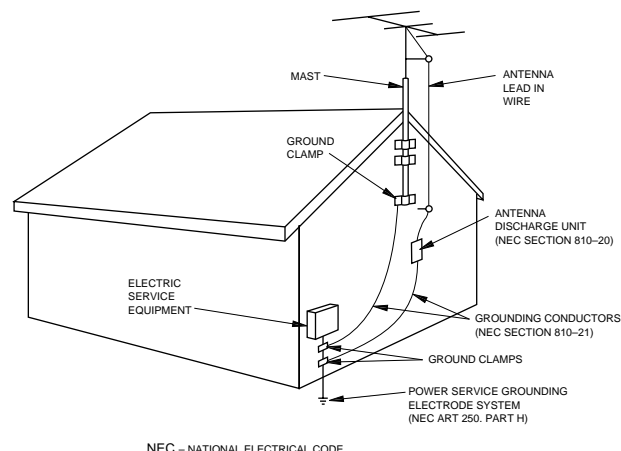
19 For US customers only:

Outdoor Antenna Grounding – If an outside antenna is connected to this unit, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

EXAMPLE OF ANTENNA GROUNDING



SPECIAL NOTES FOR FCC COMPOSITE DEVICE (for US customers only)

This device is a composite system. The digital device component may not cause harmful interference.

FCC INFORMATION (for US customers only)

1. IMPORTANT NOTICE : DO NOT MODIFY THIS UNIT!

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. IMPORTANT : When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. NOTE : This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices.

This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices.

Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Electronics Corp., U.S.A. 6660 Orangethorpe Ave, Buena Park, CA 90620.

The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

We Want You Listening For A Lifetime (for US customers only)

YAMAHA and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion – and, most importantly, without affecting your sensitive hearing.

Since hearing damage from loud sounds is often undetectable until it is too late, YAMAHA and the Electronic Industries Association's Consumer Electronics Group recommend you to avoid prolonged exposure from excessive volume levels.

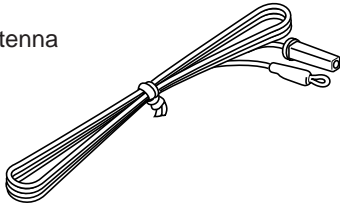
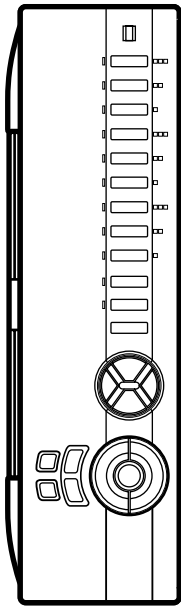
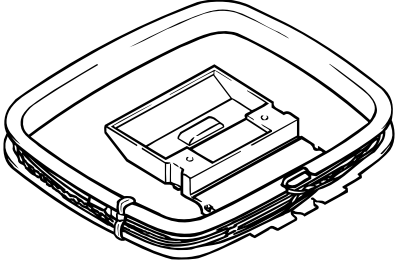
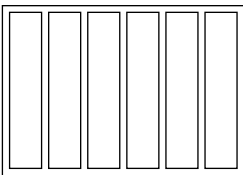
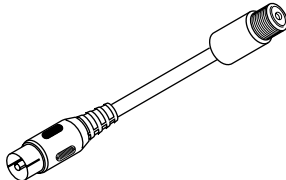
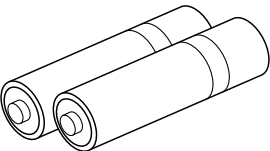


CONTENTS

SAFETY INSTRUCTIONS	Inside the Front Cover	ADJUSTMENTS IN THE “SET MENU” MODE	26
SUPPLIED ACCESSORIES	2	BASIC OPERATIONS	28
FEATURES	3	TUNING OPERATIONS	32
CAUTION	4	PRESET TUNING	33
NOTES ABOUT THE REMOTE CONTROL TRANSMITTER	5	USING DIGITAL SOUND FIELD PROCESSOR (DSP)	36
PROFILE OF THIS UNIT	6	BRIEF OVERVIEW OF DIGITAL SOUND FIELD PROGRAMS	40
SPEAKER SETUP	8	SETTING THE SLEEP TIMER	42
CONNECTIONS	10	REMOTE CONTROL TRANSMITTER	43
CONTROLS AND THEIR FUNCTIONS	19	TROUBLESHOOTING	53
ADJUSTMENTS BEFORE USING THIS UNIT	22	SPECIFICATIONS	55

SUPPLIED ACCESSORIES

After unpacking, check that the following parts are included.

<p>Indoor FM Antenna</p> 	<p>Remote Control Transmitter</p> 
<p>AM Loop Antenna</p> 	<p>User function stickers</p> 
<p>Antenna adapter (U.S.A. and Canada models only)</p> 	
<p>Batteries (size AA, R6, UM-3)</p> 	

FEATURES

- **5 Speaker Configuration**
 - Main:** 80W + 80W (8Ω) RMS Output Power, 0.04% THD, 20–20,000 Hz
 - Center:** 80W (8Ω) RMS Output Power, 0.07% THD, 20–20,000 Hz
 - Rear:** 80W + 80W (8Ω) RMS Output Power, 0.07% THD, 20–20,000 Hz
- **Digital Sound Field Processor**
- **Dolby Digital (AC-3) Decoder**
- **Dolby Pro Logic Surround Decoder**
- **Theater-like Sound Experience by the Combination of Dolby Surround and YAMAHA DSP Technology (CINEMA DSP)**
- **Automatic Input Balance Control for Dolby Pro Logic Surround**
- **Test Tone Generator for Easier Speaker Balance Adjustment**
- **3 Center Channel Modes (NORMAL/WIDE/PHANTOM)**
- **BASS EXTENSION Switch for Reinforcing Bass Response**
- **40-Station Random Access Preset Tuning**
- **Automatic Preset Tuning**
- **Preset Station Shifting Capability (Preset Editing)**
- **IF Count Direct PLL Synthesizer Tuning System**
- **Video Signal Input/Output Capability (Including S Video Connections)**
- **SLEEP Timer**
- **On Screen Display Function Helpful in Controlling This Unit**
- **“Learning” Remote Control Transmitter**

CAUTION : READ THIS BEFORE OPERATING YOUR UNIT.

1. To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
2. Install this unit in a cool, dry, clean place – away from windows, heat sources, sources of excessive vibration, dust, moisture and cold. Avoid sources of humming (transformers, motors). To prevent fire or electrical shock, do not expose the unit to rain or water.
3. Never open the cabinet. If something drops into the set, contact your dealer.
4. Do not use force on switches, controls or connection wires. When moving the unit, first disconnect the power plug and the wires connected to other equipment. Never pull the wires themselves.
5. The openings on the cabinet assure proper ventilation of the unit. If these openings are obstructed, the temperature inside the cabinet will rise rapidly. Therefore, avoid placing objects against these openings, and install the unit in well-ventilated condition. Make sure to allow a space of at least 20 cm behind, 20 cm on the both sides and 30 cm above the top panel of the unit. Otherwise it may not only damage the unit, but also cause fire.
6. Always set the VOLUME control to “– ∞” before starting the audio source play. Increase the volume gradually to an appropriate level after playback has been started.
7. Do not attempt to clean the unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.
8. Be sure to read the “TROUBLESHOOTING” section regarding common operating errors before concluding that the unit is faulty.
9. When not planning to use this unit for long periods of time (ie., vacation, etc.), disconnect the AC power plug from the wall outlet.
10. To prevent lightning damage, disconnect the AC power plug and disconnect the antenna cable when there is an electrical storm.
11. Grounding or polarization – Precautions should be taken so that the grounding or polarization of an appliance is not defeated.
12. AC outlet
Do not connect audio equipment to the AC outlet on the rear panel if that equipment requires more power than the outlet is rated to provide.
13. **Voltage Selector (China and General Models only)**
The voltage selector on the rear panel of this unit must be set for your local main voltage BEFORE plugging into the AC main supply.
Voltages are 110/120/220/240 V AC, 50/60 Hz.

This unit is not disconnected from the AC power source as long as it is connected to the wall outlet, even if this unit itself is turned off. This state is called the standby mode. In this state, this unit is designed to consume a very small quantity of power.

IMPORTANT

Please record the serial number of this unit in the space below.

Serial No.:

The serial number is located on the rear of the unit. Retain this Owner's Manual in a safe place for future reference.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

FREQUENCY STEP switch (China and General Models only)

Because the interstation frequency spacing differs in different areas, set the FREQUENCY STEP switch (located at the rear) according to the frequency spacing in your area. Before setting this switch, disconnect the AC power plug of this unit from the AC outlet.

FOR CANADIAN CUSTOMERS

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT AND FULLY INSERT.

THIS CLASS B DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

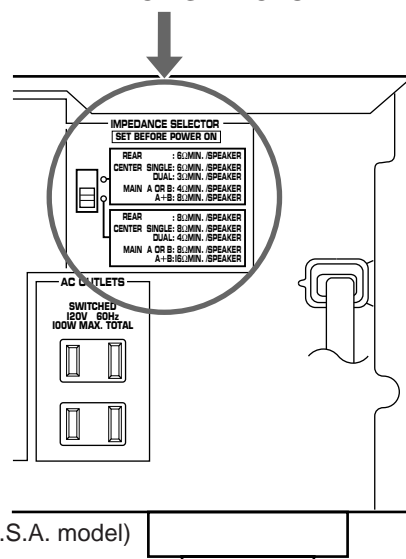
WARNING

Do not change the IMPEDANCE SELECTOR switch setting while the power to this unit is on, otherwise this unit may be damaged.

IF THIS UNIT FAILS TO TURN ON WHEN THE STANDBY/ON SWITCH IS PRESSED

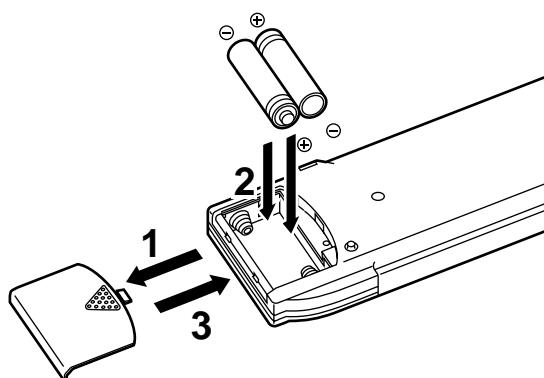
The **IMPEDANCE SELECTOR** switch may not be set to either end closely. If so, set the switch to either end closely.

IMPEDANCE SELECTOR



NOTES ABOUT THE REMOTE CONTROL TRANSMITTER

Battery installation



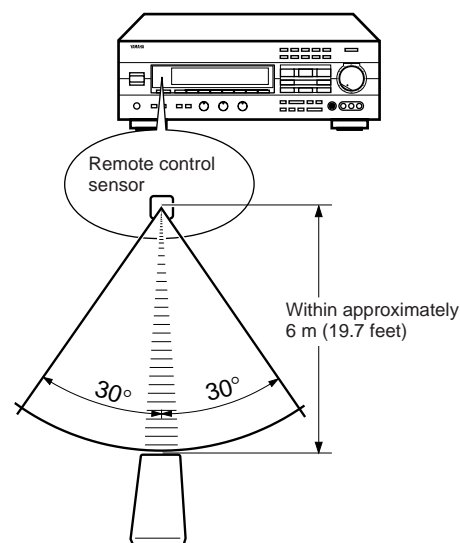
Battery replacement

If you find that the remote control transmitter must be used closer to the main unit, the batteries are weak. Replace both batteries with new ones.

Notes

- Use only AA, R6, UM-3 batteries for replacement.
- Be sure the polarities are correct. (See the illustration inside the battery compartment.)
- Remove the batteries if the remote control transmitter will not be used for an extended period of time.
- If batteries leak, dispose of them immediately. Avoid touching the leaked material or letting it come in contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.
- After you change batteries, make sure to press the **RESET** button inside the battery compartment.

Remote control transmitter operation range



Notes

- There should be no large obstacles between the remote control transmitter and the main unit.
- If the remote control sensor is directly illuminated by strong lighting (especially an inverter type of fluorescent lamp etc.), it might cause the remote control transmitter not to work correctly. In this case, reposition the main unit to avoid direct lighting.

PROFILE OF THIS UNIT

This unit incorporates a sophisticated, multi-program digital sound field processor. The processor allows you to electronically expand and change the shape of the audio sound field from both audio and video sources, creating a theater-like experience in your listening room. This unit has a total of 10 digital sound field processor (DSP) modes. You can create an excellent audio sound field by selecting a suitable sound field (this will, of course, depend on what you will be listening to), and adding desired adjustments.

In addition, this unit incorporates a Dolby Pro Logic Surround decoder and Dolby Digital (AC-3) decoder for multi-channel sound reproduction of Dolby Surround encoded video sources. The operation of the Dolby Pro Logic Surround or Dolby Digital (AC-3) decoder can be controlled by selecting a corresponding DSP program including combined operations of the Yamaha DSP and the Dolby Pro Logic Surround or Dolby Digital (AC-3) decoder.

Digital Sound Field Processing

What is it that makes live music so good? Today's advanced sound reproduction technology lets you get extremely close to the sound of a live performance, but chances are you'll still notice something missing, the acoustic environment of the live concert hall. Extensive research into the exact nature of the sonic reflections that create the ambience of a large hall has made it possible for Yamaha engineers to bring you this same sound in your own listening room, so you'll feel all the sound of a live concert.

Furthermore, our technicians, armed with sophisticated measuring equipment, have even made it possible to capture the acoustics of a variety of actual concert halls, jazz clubs, theaters, etc. from around the world, to allow you to accurately recreate any one of these live performance environments, all in your own home.

Dolby Pro Logic Surround

This unit employs a Dolby Pro Logic Surround decoder similar to professional Dolby Stereo decoders used in many movie theaters. By using the Dolby Pro Logic Surround decoder, you can experience the dramatic realism and impact of Dolby Surround movie theater sound in your own home. Dolby Pro Logic employs a four channel five speaker system. The Pro Logic Surround system divides the input signal into four levels: the left and right main channels, the center channel (used for dialog), and the rear surround sound channels (used for sound effects, background noise, and other ambient noises). The center channel allows listeners seated in even less-than-ideal positions to hear the dialog originating from the action on the screen while experiencing good stereo imaging.

Dolby Surround is encoded on the sound track of pre-recorded video tapes, laser discs, and some TV/cable broadcasts. When you play a source encoded with Dolby Surround on this unit, the Dolby Pro Logic Surround decoder decodes the signal and distributes the surround-sound effects.

This Dolby Pro Logic Surround Decoder employs a digital signal processing system. This system improves the stability of sound at each channel and crosstalk between channels, so that positioning of sounds around the room is more accurate compared with conventional analog signal processing systems.

In addition, this unit features a built-in automatic input balance control. This always assures you the best performance without manual adjustment.

Dolby Digital (AC-3)

The built-in Dolby Digital (AC-3) Decoder leads you into a totally new sound experiences.

Dolby Digital (AC-3) is a new generation of multi-channel digital audio technology, or the newest spatial sound processing format developed for 35 mm film-movies by employing a new kind of low bit-rate audio coding.

Dolby Digital (AC-3) is a digital surround sound system that provides completely independent multi-channel audio to consumers. In multi-channel form, Dolby Digital (AC-3) provides five full range channels in what is sometimes referred to as a "3/2" configuration: three front channels (left, center and right), plus two surround channels. A sixth bass-only effect channel is also provided for output of LFE (low frequency effect), or low bass effects that are independent of other channels. This channel is counted as 0.1, thus giving rise to the term 5.1 channels in total.

Compared to Dolby Pro Logic that is referred to a "3/1" system (left front, center, right front and just one surround channel), Dolby Digital (AC-3) features two surround channels, called stereo or split surrounds, each offering the same full range fidelity as the three front channels.

Sound of wide dynamic range reproduced by the five full range channels presents listeners much excitement that has never been experienced before. Precise sound orientation by the discrete digital sound processing expands realism that the original movie possesses.

Laser Disc and DVD are home audio formats that could benefit from Dolby Digital (AC-3). In the near future, Dolby Digital (AC-3) will also be applied to DBS, CATV and HDTV. The ongoing release of Dolby Stereo Digital theatrical films now underway will provide an immediate source of Dolby Digital (AC-3) encoded video software.



Manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby", "AC-3", "Pro Logic", and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

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The following original functions make the surround-sound effect of Dolby Digital (AC-3) become the most suitable for your audio system and the listening conditions.

- **Dynamic range (sound scale) of source can be changed so that it will be suitable for the listening conditions.**
- **Output of low bass from any channel can be assigned to either the MAIN SPEAKERS terminals or SUBWOOFER terminal to maximize system performance.**
- **Output of LFE can be assigned to either the MAIN SPEAKERS terminals or SUBWOOFER terminal to maximize system performance.**

Dolby Surround + DSP (CINEMA DSP)

Dolby Surround sound system shows its full ability in a large movie theater, because movie sounds are originally designed to be reproduced in a large movie theater using many speakers. It is difficult to create a sound environment similar to that of a movie theater in your listening room, because the room size, materials of inside walls, the number of speakers, etc. of your listening room is much different from those of a movie theater.

Yamaha DSP technology made it possible to present you with nearly the same sound experience as that of a large movie theater in your listening room by compensating for lack of presence and dynamics in your listening room with its original digital sound fields combined with Dolby Surround sound field.

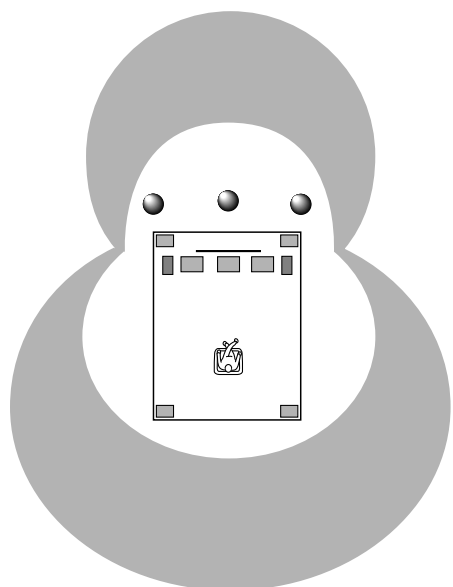
CINEMA DSP

The YAMAHA "CINEMA DSP" logo indicates those programs are created by the combination of Dolby Surround and YAMAHA DSP technology.

Dolby Pro Logic + 2 Digital Sound Fields

Digital sound fields are created on the presence side and the rear surround side of the Dolby Pro Logic Surround-decoded sound field respectively. They create a wide acoustic environment and emphasize surround-effect in the room, letting you feel much presence as if you are watching a movie in a popular Dolby Stereo theater.

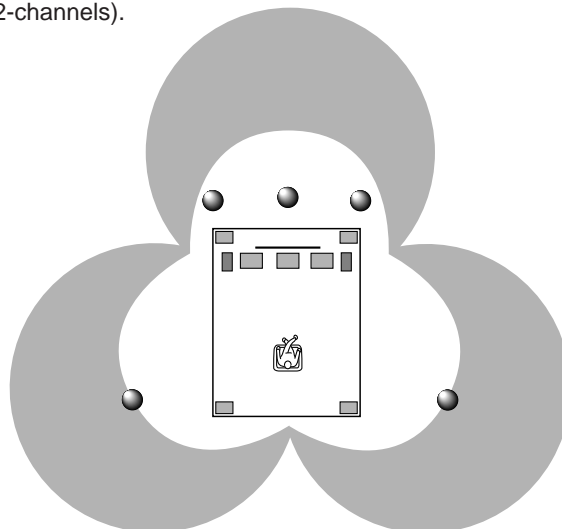
This combination is available when the sound field program No. 2, No. 3 or No. 4 is selected, and the input signal of source is analog, PCM audio or encoded with the Dolby Digital (AC-3) in 2-channels.



Dolby Digital (AC-3) + 3 Digital Sound Fields

Digital sound fields are created on the presence side and the independent left and right surround sides of the Dolby Digital (AC-3)-decoded sound field respectively. They create a wide acoustic environment and much surround effect in the room without losing high channel separation. With wide dynamic range of Dolby Digital (AC-3) sound, this sound field combination lets you feel as if you are watching a movie in the newest Dolby Stereo Digital theater. This will be the most ideal home theater sound at the present time.

This combination is available when the sound field program No. 2, No. 3 or No. 4 is selected, and the input signal of source is encoded with the Dolby Digital (AC-3) (except in 2-channels).



SPEAKER SETUP

SPEAKERS TO BE USED

This unit is designed to provide the best sound-field quality with a 5 speaker configuration, using main speakers, rear speakers and a center speaker.

The main speakers are used for the main source sound plus the effect sounds. They will probably be the speakers from your present stereo system. The rear speakers are used for the effect and surround sounds, and the center speaker is for the center sounds (dialog, vocals, etc.). If for some reason it is not practical to use a center speaker, you can do without it. Best results, however, are obtained with the full system.

The main speakers should be high performance models and have enough power handling capacity to accept the maximum output of your audio system.

Other speakers do not have to be equal to the main speakers. For precise sound localization, however, it is ideal to use high performance models that can reproduce sounds in full range for the center speaker and the rear speakers.

Use of a subwoofer expands your sound field

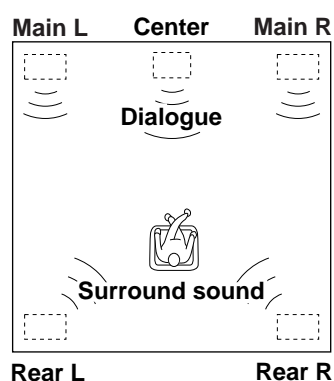
It is also possible to further expand your system with the addition of a subwoofer and amplifier. The use of a subwoofer is effective not only for reinforcing bass frequencies from any or all channels, but also for reproducing the LFE (low frequency effect) sound with high fidelity when playing back a source with the Dolby Digital (AC-3) decoded. You may wish to choose the convenience of a Yamaha Active Servo Processing Subwoofer System, which has its own built-in power amplifier.

SPEAKER CONFIGURATION

5-Speaker Configuration

This configuration is the most effective and recommended one. When playing back a source using the DSP program, **DIGITAL (PRO LOGIC)**, **DIGITAL (PRO LOGIC) ENHANCED**, **DIGITAL (70 mm) MOVIE THEATER** or **TV SPORTS**, or when playing back a source which contains center-channel signals (dialog, vocals, etc.) using any DSP program with the Dolby Digital (AC-3) decoded, conversations will be output from the center speaker and the ambience will be excellent.

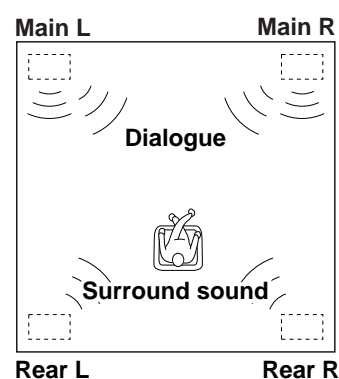
Note: Set the CENTER SPEAKER mode to the **"NORMAL"** or **"WIDE"** position. (For details, refer to page 22.)



4-Speaker Configuration

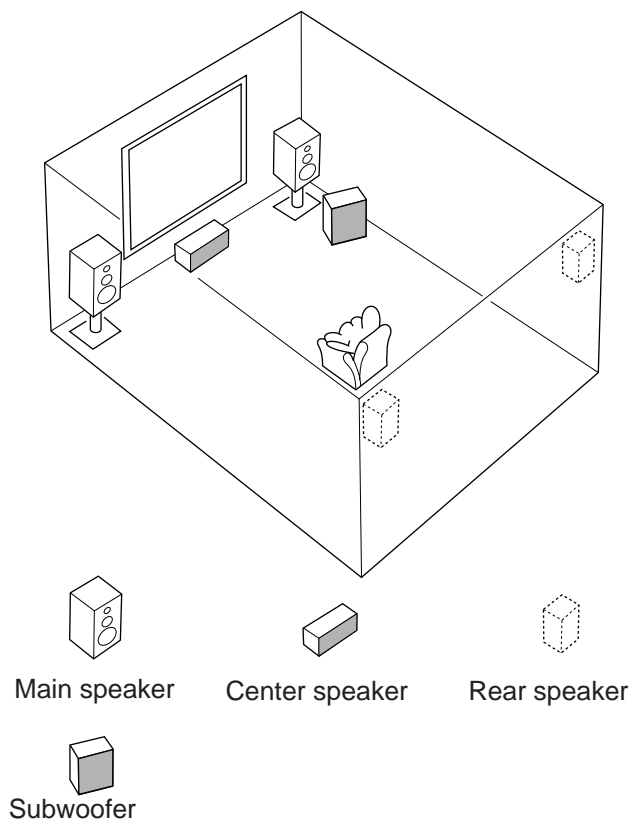
The center speaker is not used in this configuration. When playing back a source using the DSP program, **DIGITAL (PRO LOGIC)**, **DIGITAL (PRO LOGIC) ENHANCED**, **DIGITAL (70 mm) MOVIE THEATER** or **TV SPORTS**, or when playing back a source which contains center-channel signals (dialog, vocals, etc.) using any DSP program with the Dolby Digital (AC-3) decoded, the center sound is output from the left and the right main speakers. However, the sound effect of other programs can be the same as that of the 5-speaker configuration.

Note: Be sure to set the CENTER SPEAKER mode to the **"PHANTOM"** position. (For details, refer to page 22.)



SPEAKER PLACEMENT

When you place speakers, refer to the following.



Main: In normal position. (The position of your present stereo speaker system.)

Rear: Behind your listening position, facing slightly inward. Nearly 1.8 m (approx. 6 feet) up from the floor.

Center: Precisely between the main speakers. (To avoid interference with TV sets, use a magnetically shielded speaker.)

Subwoofer:
The position of the subwoofer is not so critical because low bass tones are not highly directional.

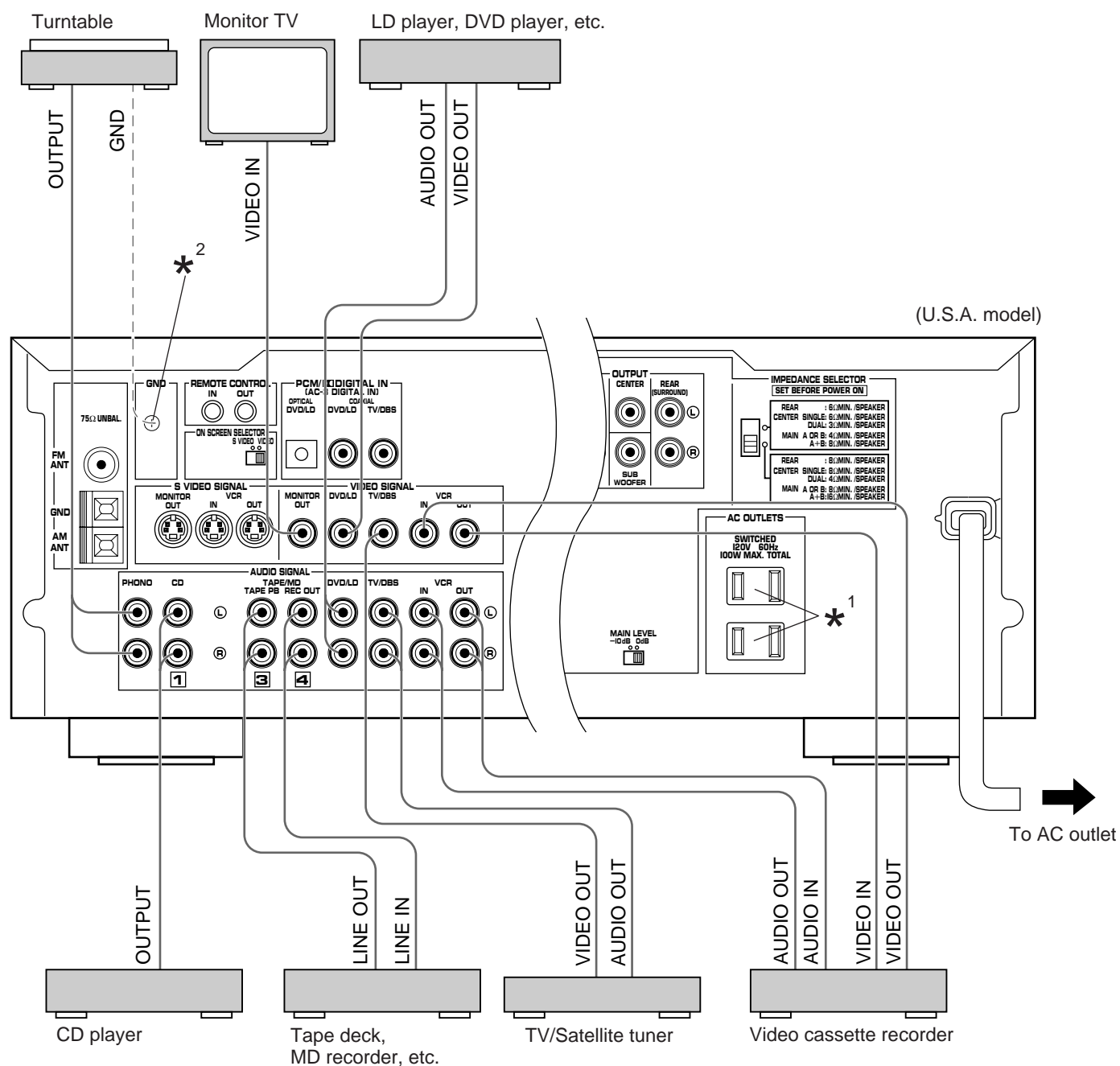
CONNECTIONS

Never plug in this unit and other components until all connections are completed.

CONNECTIONS WITH OTHER COMPONENTS

When making connections between this unit and other components, be sure all connections are made correctly, that is to say L (left) to L, R (right) to R, "+" to "+" and "-" to "-". Also, refer to the owner's manual for each component to be connected to this unit.

* If you have YAMAHA components numbered as 1, 3, 4, etc. on the rear panel, connections can be made easily by making sure to connect the output (or input) terminals of each component to the same-numbered terminals of this unit.



*¹, *²: See the next page.

*¹ AC OUTLET(S) (SWITCHED)

(U.S.A., Canada, Singapore, China and General models)
..... 2 SWITCHED OUTLETS
(Australia model) 1 SWITCHED OUTLET

Use these to connect the power cords from your components to this unit.

The power to the **SWITCHED** outlets is controlled by this unit's **STANDBY/ON** switch or the provided remote control transmitter's **SYSTEM POWER ON** and **STANDBY** keys.

These outlets will supply power to any component whenever this unit is turned on.

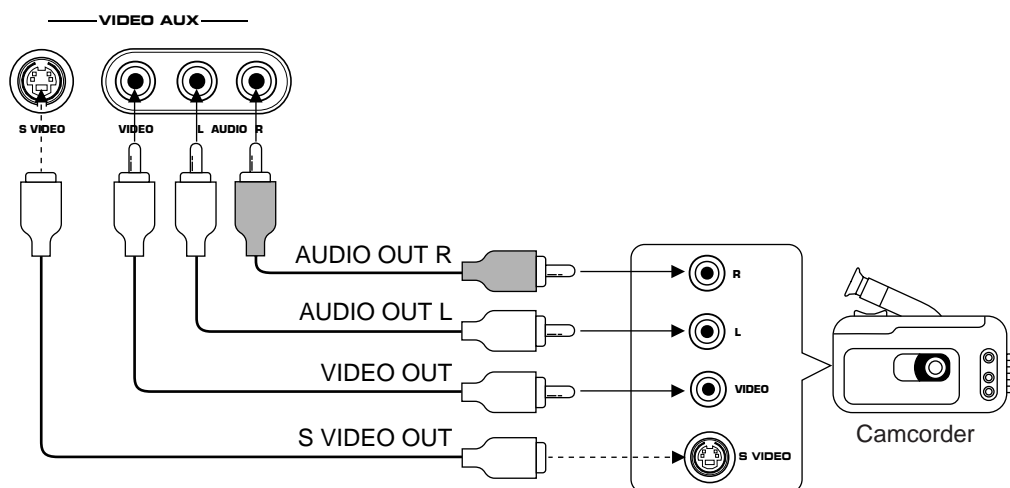
The maximum power (total power consumption of components) that can be connected to the **SWITCHED AC OUTLET(S)** is 100 watts.

*² GND terminal (For turntable use)

Connecting the ground wire of the turntable to the **GND** terminal will normally minimize hum, but in some cases better results may be obtained with the ground wire disconnected.

■ CONNECTING TO VIDEO AUX TERMINALS (ON THE FRONT PANEL)

These terminals are used to connect any video input source such as a camcorder to this unit.



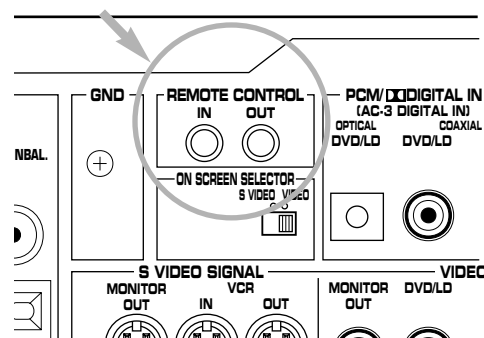
For Custom Installer For U.S.A., Canada and Australia models only

REMOTE CONTROL (IN, OUT) terminals

These terminals are used for custom installation system. When this unit is connected to the components for custom installation system, you can operate this unit with the system remote control.

Connect the **REMOTE CONTROL IN** terminal of this unit to the output terminal of the central controller for custom installation system.

By connecting the **REMOTE CONTROL OUT** terminal of this unit to the REMOTE CONTROL IN terminal of the other component, you can also operate it with the system remote control. In this way, up to 6 components can be connected in series.



■ CONNECTING TO DIGITAL (OPTICAL AND COAXIAL) TERMINALS

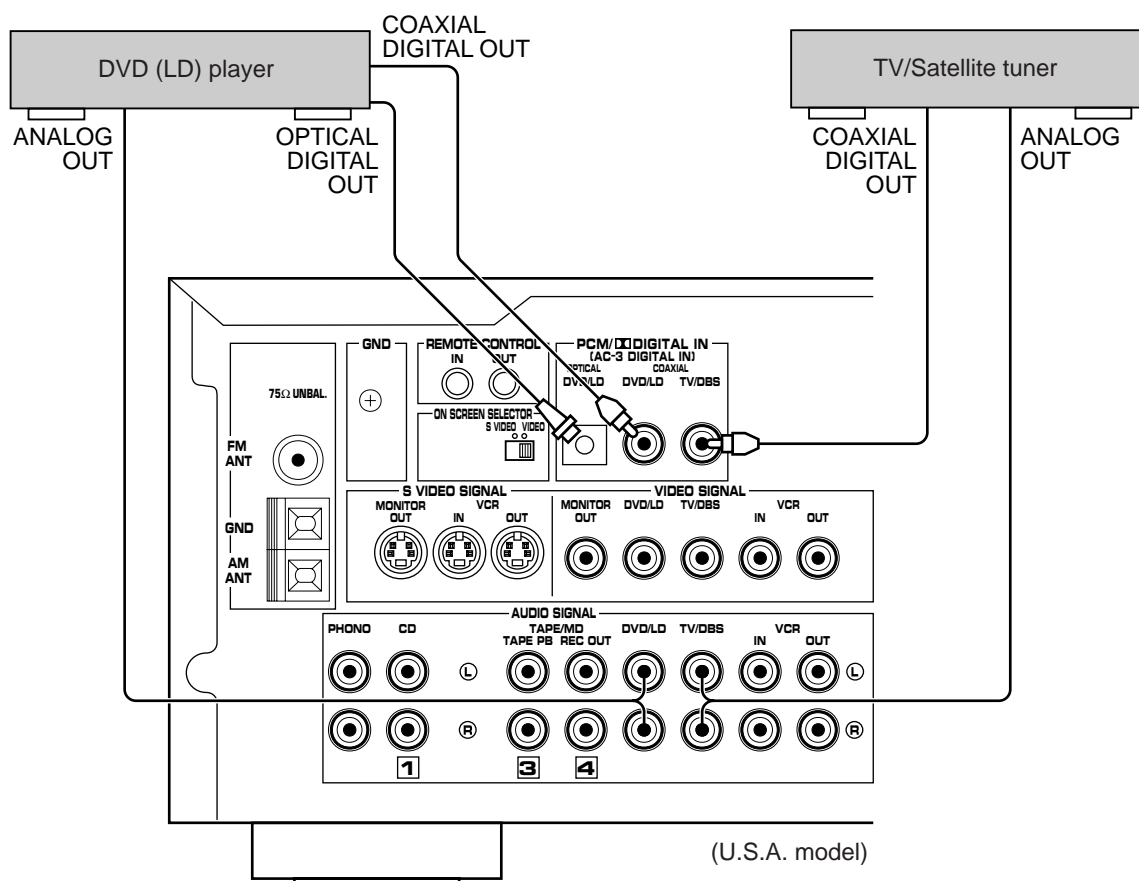
If your DVD (LD) player, TV/satellite tuner, etc. are equipped with coaxial or optical digital audio signal output terminals, they can be connected to this unit's COAXIAL and/or OPTICAL digital signal input terminals.

To make a connection between optical digital audio signal terminals, remove the cover from each terminal, and then connect them by using a commercially available optical fiber cable that conforms to EIAJ standards. Other cables might not function correctly.

Even if you connect an audio/video unit to the OPTICAL (or COAXIAL) terminal of this unit, you must keep the unit connected with the same named analog audio signal terminals of this unit, because digital signal cannot be recorded by a tape deck or VCR connected to this unit. You can switch the selection of input signals between "digital" and "analog" easily. (See page 29 for details.)

Notes

- When connecting an audio/video unit to both of the digital and analog terminals of this unit, make sure to connect to both terminals of the same name.
- Be sure to attach the covers when the OPTICAL terminals are not being used, in order to protect the terminals from dust.
- All digital audio signal input terminals are applicable to the sampling frequency of 32 kHz, 44.1 kHz and 48 kHz.



Notes on connecting with an LD player equipped with an AC-3 RF output

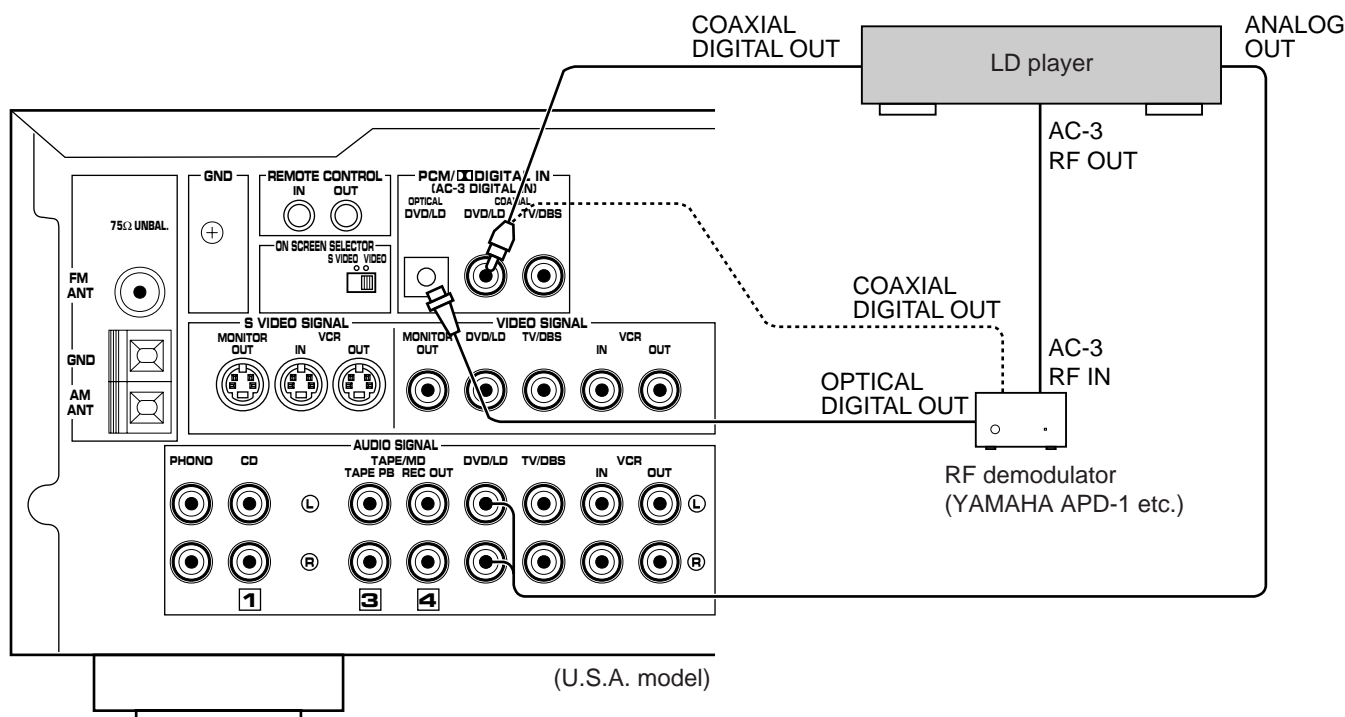
If your LD player has AC-3 RF signal output terminal and no digital signal output terminal for AC-3 discrete audio signals, connect the AC-3 RF signal output terminal to this unit's OPTICAL (or COAXIAL) digital signal input terminal by using an RF demodulator (separate purchase).

First, connect the AC-3 RF signal output terminal of the LD player to the AC-3 RF signal input terminal of the RF demodulator. Next, connect the optical (or coaxial) digital signal output terminal of the RF demodulator to the OPTICAL (or COAXIAL) digital signal input terminal of this unit. This connection is necessary for sending audio signals encoded with the Dolby Digital (AC-3) from the LD player to this unit.

It is also necessary to connect the LD player to this unit's analog audio signal input terminals regardless of the AC-3 RF signal connection, for playing back an LD source with the Dolby Pro Logic Surround decoded or in normal stereo (or monaural).

If desired, you can also connect the digital signal output terminal (for 2-channel audio signals) of the LD player to this unit. If you will do so, connect it to the COAXIAL digital signal input terminal of this unit, and connect the RF demodulator to the OPTICAL digital signal input terminal of this unit.

By this connection, if the input mode of the DVD/LD source is in "AUTO", you can enjoy listening to sounds with the Dolby Digital (AC-3) decoded when you play a disc encoded with the Dolby Digital (AC-3) though signals are input to both OPTICAL and COAXIAL digital signal input terminals of this unit simultaneously (because signals input to the OPTICAL terminal take priority of signals input to the COAXIAL terminal). See page 29 for details about switching the input mode.



Notes

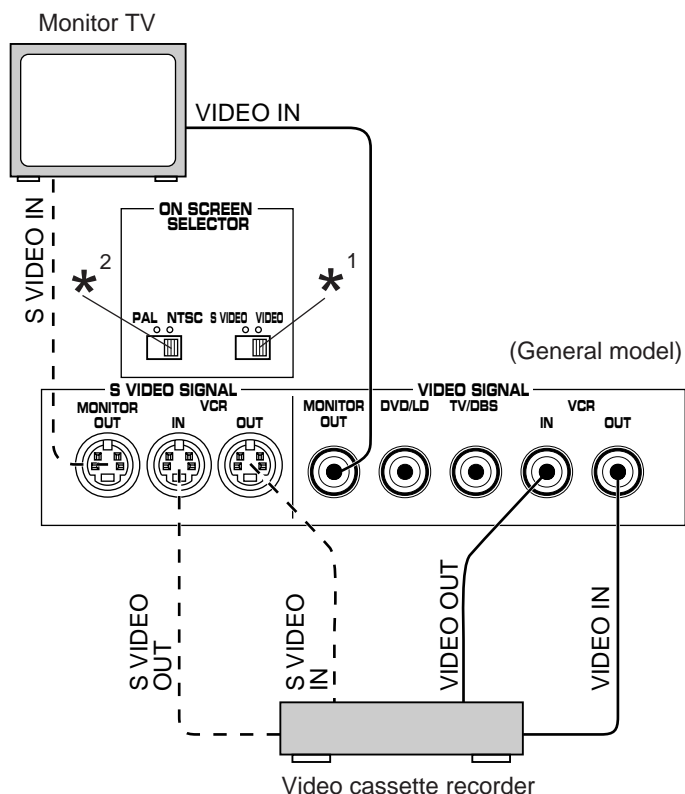
- If your LD player has an OPTICAL digital output terminal (for 2-channel audio signals), **be sure not to connect it to this unit's OPTICAL digital input terminal**. If you do so, when you play a disc encoded with the Dolby Digital (AC-3), the Dolby Digital (AC-3) will not be decoded because the 2-channel audio signals input to this unit's OPTICAL digital input terminal are selected prior to the signals encoded with the Dolby Digital (AC-3) input to this unit's COAXIAL digital input terminal by way of an RF demodulator.
- If, for example, you play a CD on the LD player (which can play a CD also), there is no input to the OPTICAL terminal, so the signals input to the COAXIAL terminal take priority. In this case, switch off the RF demodulator to listen to CD sound surely. However, if your RF demodulator is the Yamaha model APD-1, you do not have to switch it off.
- When you want to play a source encoded with the Dolby Digital (AC-3) without decoding the Dolby Digital (AC-3), you must switch off the power to the RF demodulator.

■ CONNECTING TO S VIDEO SIGNAL TERMINALS

If you have a video cassette recorder and a monitor equipped with "S" (high-resolution) video terminals, those terminals can be connected to this unit's **S VIDEO SIGNAL** terminals. Connect the video cassette recorder's "S" video input and output terminals to this unit's **S VIDEO SIGNAL VCR IN** and **OUT** terminals respectively, and connect the monitor's "S" video input terminal to this unit's **S VIDEO SIGNAL MONITOR OUT** terminal. Otherwise, connect the video cassette recorder's composite video terminals to this unit's composite video terminals, and connect the monitor's composite video input terminal to this unit's composite **MONITOR OUT** terminal.

Note

If video signals are sent to both **S VIDEO SIGNAL** input and composite input terminals, the signals will be sent to their respective output terminals.



ON SCREEN DISPLAY

If you connect a video cassette recorder, LD player, video monitor, etc. to this unit, you can display DSP program names and information about other settings and adjustments on the video monitor screen which is connected to the composite **VIDEO SIGNAL** (or **S VIDEO SIGNAL**) **MONITOR OUT** terminal of this unit. Information is superimposed over the video image. If there is no program material on the monitor, the information will be displayed over a monochromatic background.

By using the **ON SCREEN SELECTOR S VIDEO/VIDEO** switch, select the video monitor connected to the **S VIDEO SIGNAL MONITOR OUT** terminal or composite **VIDEO SIGNAL MONITOR OUT** terminal on which you want to display the screen display information.

*¹

ON SCREEN SELECTOR S VIDEO/VIDEO switch

S VIDEO: In this position, the screen display information is displayed on the video monitor connected to the **S VIDEO SIGNAL MONITOR OUT** terminal.

VIDEO: In this position, the screen display information is displayed on the video monitor connected to the composite **VIDEO SIGNAL MONITOR OUT** terminal.

*²

PAL/NTSC switch (China and General models only)

This unit is designed for use with the NTSC and PAL television formats. Set this switch to the position for the format your monitor TV employs.

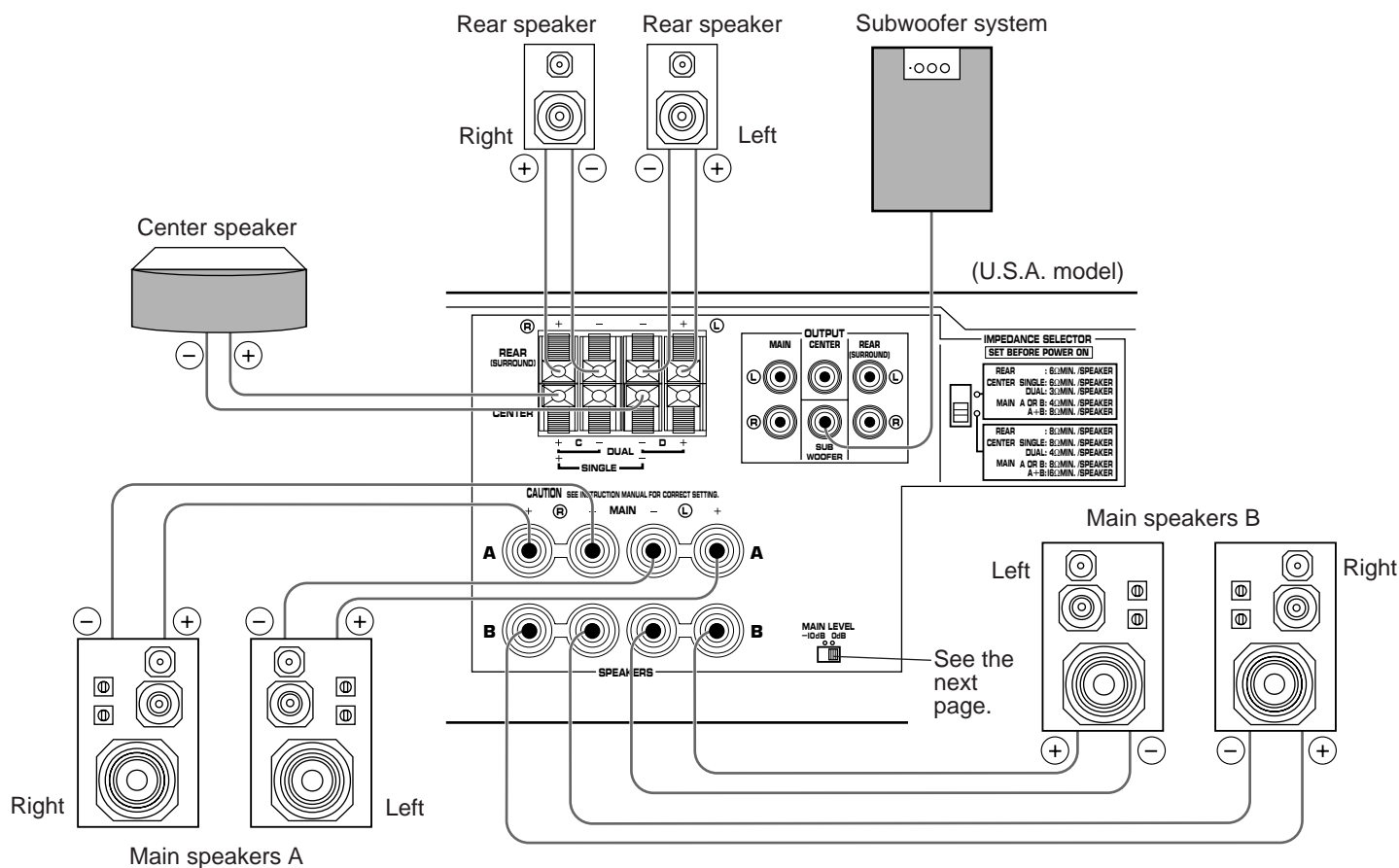
PAL: Outputs signals in the PAL format no matter which format (PAL or NTSC) of video signal is sent from an external video unit to this unit. Set to this position if your monitor TV employs the PAL format.

NTSC: Outputs signals in the NTSC format no matter which format (PAL or NTSC) of video signal is sent from an external video unit to this unit. Set to this position if your monitor TV employs the NTSC format.

Note

Make sure to input a video signal which employs the same format that your monitor TV employs, otherwise a picture will not be played back normally.

CONNECTING SPEAKERS



Note

Use speakers with the specified impedance shown on the rear of this unit.

Note on main speaker connections:

One or two speaker systems can be connected to this unit. If you use only one speaker system, connect it to either the **SPEAKERS A** or **B** terminals.

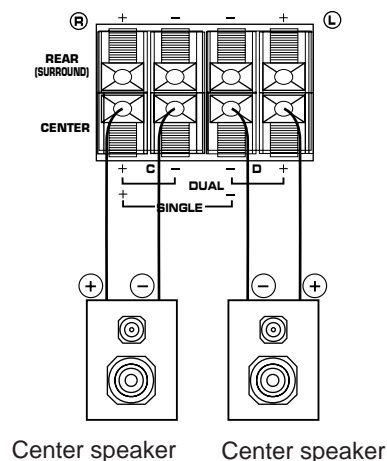
Note on a subwoofer connection:

You may wish to add a subwoofer to reinforce low frequencies or to output low bass sound from the subwoofer channel when reproducing discrete signals.

Connect the **SUBWOOFER OUTPUT** terminal of this unit to the INPUT terminal of the subwoofer amplifier, and connect the speaker terminals of the subwoofer amplifier to the subwoofer. With some subwoofers, including the Yamaha Active Servo Processing Subwoofer System, the amplifier and subwoofer are in the same unit.

Note on center speaker connection:

One or two center speakers can be connected to this unit. If you cannot place the center speaker on or under the TV, it is recommended to use two center speakers and place them on both sides of the TV to orient the center sound at the center position. For connecting two center speakers, follow the method shown below.



How to Connect:

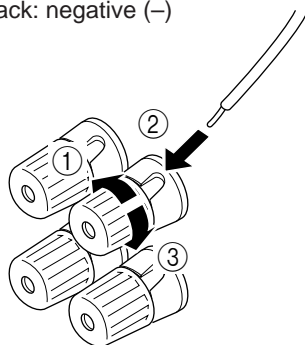
Connect the **SPEAKERS** terminals to your speakers with wire of the proper gauge, cut as short as possible. If the connections are faulty, no sound will be heard from the speakers. Make sure that the polarity of the speaker wires is correct, that is the + and – markings are observed. If these wires are reversed, the sound will be unnatural and lack bass.

Caution

Do not let the bare speaker wires touch each other and do not let them touch any metal part of this unit. This could damage this unit and/or speakers.

For connecting to the MAIN SPEAKERS terminals

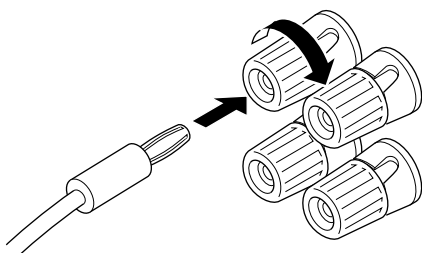
Red: positive (+)
Black: negative (–)



- ① Unscrew the knob.
- ② Insert the bare wire.
[Remove approx. 5mm (1/4") insulation from the speaker wires.]
- ③ Tighten the knob and secure the wire.

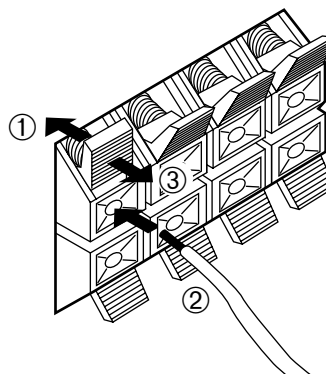
<U.S.A., Canada, China and General models only>

Banana Plug connections are also possible. Simply insert the Banana Plug connector into the corresponding terminal.



For connecting to the REAR and CENTER SPEAKERS terminals

Red: positive (+)
Black: negative (–)



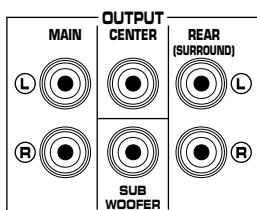
- ① Press the tab.
- ② Insert the bare wire.
[Remove approx. 5mm (1/4") insulation from the speaker wires.]
- ③ Release the tab and secure the wire.

MAIN LEVEL switch

Normally set to "0 dB". If desired, you can decrease the output level at the **MAIN SPEAKERS** terminals by 10 dB by setting this switch to "–10 dB".



■ OUTPUT terminals (for driving speakers with external amplifiers)



MAIN OUTPUT terminals

These terminals are for main channel line output. There is no connection to these terminals when you use the built-in amplifier.

However, if you drive main speakers with an external stereo power amplifier, connect the input terminals of the external amplifier (MAIN IN or AUX terminals of a power amplifier or an integrated amplifier) to these terminals.

* Output signals from the MAIN OUTPUT terminals are affected by the use of **BASS**, **TREBLE**, **BALANCE** controls and **BASS EXTENSION** switch.

CENTER OUTPUT terminal

This terminal is for center channel line output. There is no connection to this terminal when you use the built-in amplifier. However, if you drive a center speaker with an external power amplifier, connect the input terminal of the external amplifier to this terminal.

REAR (SURROUND) OUTPUT terminals

These terminals are for rear channel line output. There is no connection to these terminals when you use the built-in amplifier.

However, if you drive rear speakers with an external stereo power amplifier, connect the input terminals of the external amplifier (MAIN IN or AUX terminals of a power amplifier or an integrated amplifier) to these terminals.

SUBWOOFER OUTPUT terminal

This terminal is for connecting with the input terminal of an amplifier for driving a subwoofer.

When the input signals to this unit are in normal 2-channel stereo, this terminal outputs only frequencies below 150 Hz (200 Hz for General model only) from the main and center channels. When discrete signals are input to this unit and are selected as the input source, this terminal outputs signals from the subwoofer channel.

Note

Output level of signals from all of these terminals are adjusted by the use of **VOLUME** control on the front panel or **MASTER VOLUME** keys on the remote control transmitter.

■ IMPEDANCE SELECTOR switch

Be sure to switch this only when the power to this unit is not on. Select the position whose requirements your speaker system meets.

WARNING

Do not change the IMPEDANCE SELECTOR switch setting while the power to this unit is on, otherwise this unit may be damaged.

IF THIS UNIT FAILS TO TURN ON WHEN THE STANDBY/ON SWITCH IS PRESSED

The **IMPEDANCE SELECTOR** switch may not be set to either end closely. If so, set the switch to either end closely.



(Upper position)

Rear: The impedance of each speaker must be 6Ω or higher.

Center: If you use one center speaker, the impedance of the speaker must be 6Ω or higher.
If you use two center speakers, the impedance of each speaker must be 3Ω or higher.

Main: If you use one pair of main speakers, the impedance of each speaker must be 4Ω or higher.
If you use two pairs of main speakers, the impedance of each speaker must be 8Ω or higher.



(Lower position)

Rear: The impedance of each speaker must be 8Ω or higher.

Center: If you use one center speaker, the impedance of the speaker must be 8Ω or higher.
If you use two center speakers, the impedance of each speaker must be 4Ω or higher.

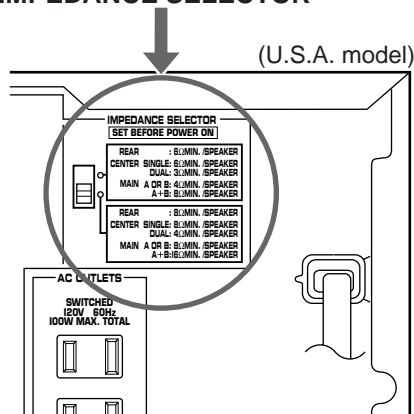
Main: <Except Canada model>

If you use one pair of main speakers, the impedance of each speaker must be 8Ω or higher.
If you use two pairs of main speakers, the impedance of each speaker must be 16Ω or higher.

<For Canada model only>

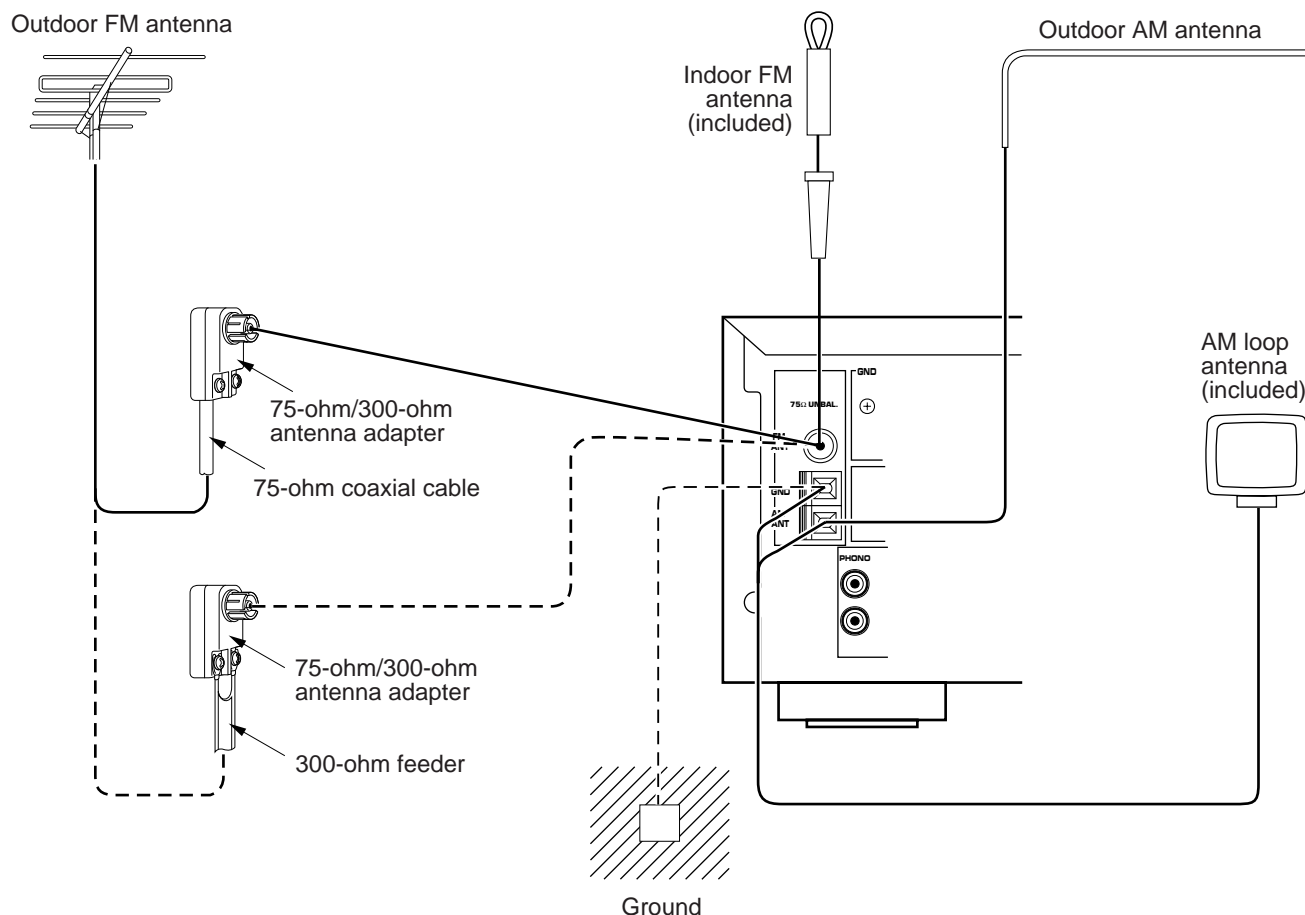
The impedance of each speaker must be 8Ω or higher.

IMPEDANCE SELECTOR

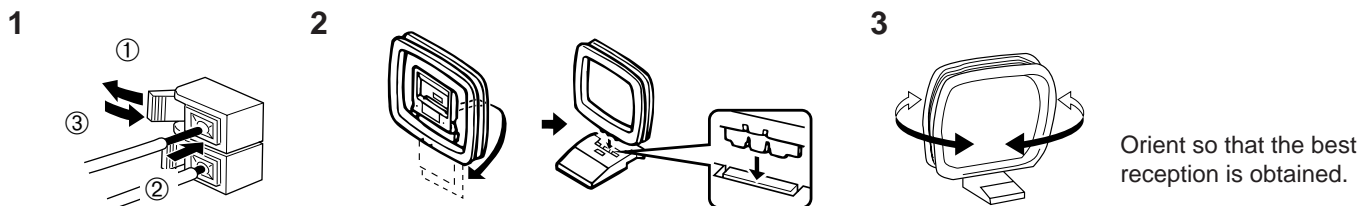


ANTENNA CONNECTIONS

- Each antenna should be connected to the designated terminals correctly, referring to the following diagram.
- Both AM and FM indoor antennas are included with this unit. In general, these antennas will probably provide sufficient signal strength. Nevertheless, a properly installed outdoor antenna will give clearer reception than an indoor one. If you experience poor reception quality, an outdoor antenna may result in improvement.



Connecting the AM loop antenna



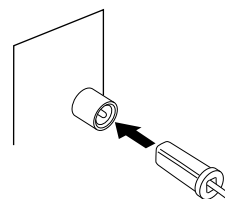
- * The AM loop antenna should be placed apart from the main unit. The antenna may be hung on a wall.
- * The AM loop antenna should be kept connected, even if an outdoor AM antenna is connected to this unit.

GND terminal

For maximum safety and minimum interference, connect the **GND** terminal to a good earth ground. A good earth ground is a metal stake driven into moist earth.

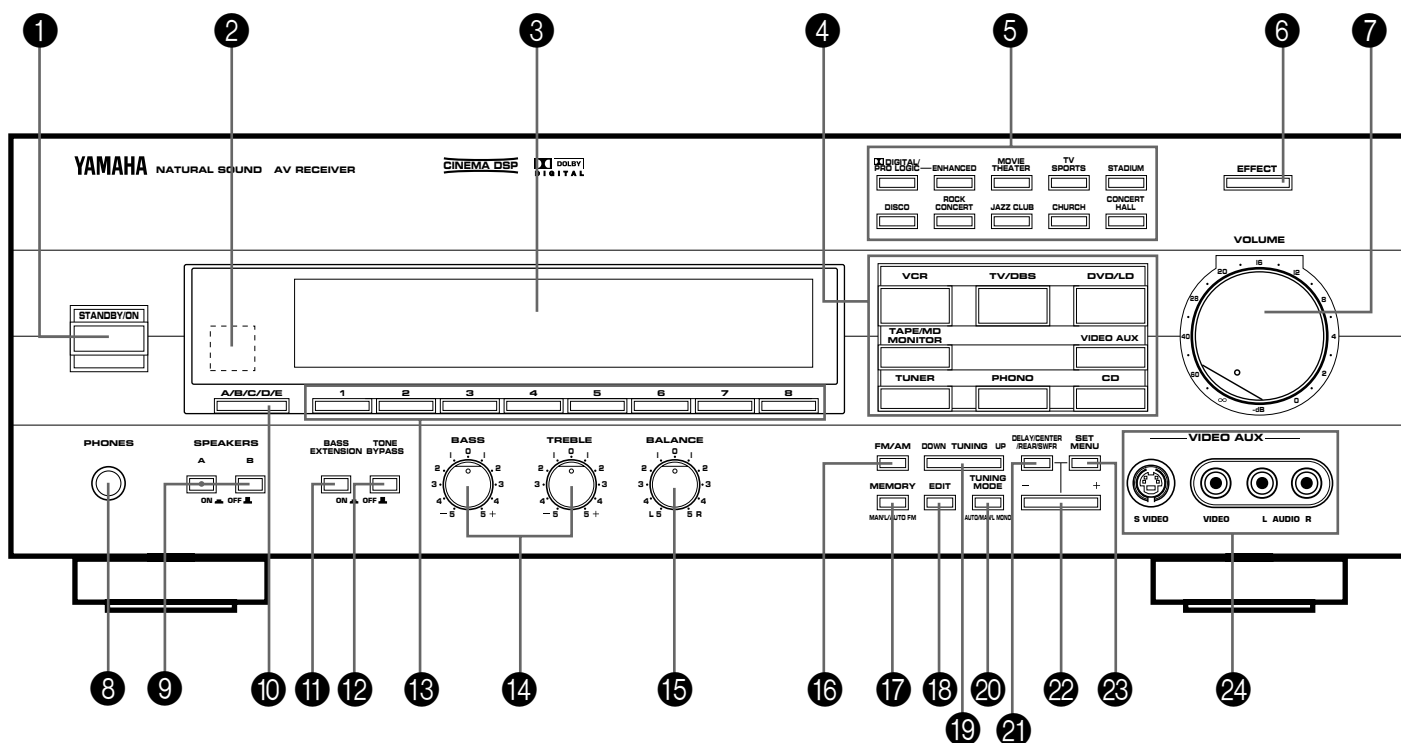
Notes

- When connecting the indoor FM antenna, insert its connector into the **FM ANT** terminal firmly.
- If you need an outdoor FM antenna to improve FM reception quality, either 300-ohm feeder or coaxial cable may be used. In locations troubled by electrical interference, coaxial cable is preferable.



CONTROLS AND THEIR FUNCTIONS

FRONT PANEL



1 STANDBY/ON switch

Press this switch to turn the power to this unit on. Press it again to turn this unit into the standby mode.

* When you press this switch to turn the power on, you will hear a click and a sound of the built-in fan rotating for a moment.

Standby mode

In this state, this unit consumes a very small quantity of power to receive infrared-signals from the remote control transmitter.

2 Remote control sensor

Receives signals from the remote control transmitter.

3 Display panel

Shows various information. (For details, refer to page 21.)

4 Input selector buttons

Select a program source to listen to or watch. When a button is pressed, the name of selected source appears on the display.

5 DSP program selector buttons

Select a DSP program. When a button is pressed, the name of selected program lights up on the display.

6 EFFECT button

Switches on and off the output from the center and rear speakers so that the sound becomes normal 2-channels.

* Even if the output from the center and rear speakers is off, when the Dolby Digital (AC-3) is decoded, signals at all channels are distributed to the main channels and output from the main speakers.

7 VOLUME control

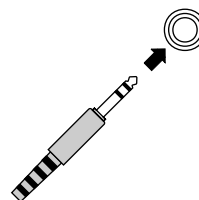
Used to raise or lower the volume level.

8 PHONES jack

When you listen with headphones, connect the headphones to the **PHONES** jack. You can listen to the sound to be output from the main speakers through headphones.

When listening with headphones privately, set both the **SPEAKERS A** and **B** switches to the **OFF** position and switch off the digital sound field processor (so that no DSP program name is illuminated on the display) by pressing the **EFFECT** button.

PHONES



9 SPEAKERS switches

Set the switch **A** or **B** (or both **A** and **B**) for the main speaker system (connected to this unit) you will use to the **ON** position. Set the switch for the main speaker system you will not use to the **OFF** position.

10 A/B/C/D/E button

Press this button to select a desired group (A–E) of preset stations.

11 BASS EXTENSION switch

When this switch is pressed inward (ON), boosts bass frequency response at the main left and main right channels while maintaining overall tonal balance. If you do not have a subwoofer, the use of this switch will be effective to reinforce the bass frequencies.

12 TONE BYPASS switch

When this switch is pressed inward (ON), the input signal does not pass through the tone (**BASS** and **TREBLE**) control circuitry so that it is unaffected by the tone control circuitry. Use this switch to obtain pure sound and to check the tone control setting. Press this switch to release it outward (OFF) to use the tone control circuitry.

13 Preset station number selector buttons

Select a preset station number (1 to 8).

14 Tone controls

These controls are effective only for the sound from the main speakers.

BASS

Used to increase or decrease the low frequency response. The 0 position produces flat response.

TREBLE

Used to increase or decrease the high frequency response. The 0 position produces flat response.

15 BALANCE control

This control is effective only for the sound from the main speakers.

Adjusts the balance of the output volume to the left and right speakers to compensate for sound imbalance caused by speaker location or listening room conditions.

16 FM/AM button

Press this button to switch the reception band to FM or AM.

17 MEMORY (MAN'L/AUTO FM) button

When this button is pressed, the "MEMORY" indicator flashes for about 5 seconds. During this period, select a desired preset station number by pressing the corresponding preset station number selector button to enter the displayed station into the memory.

When this button is pressed and held for more than 3 seconds, the automatic preset tuning begins. (For details, refer to page 34.)

18 EDIT button

This button is used to exchange the places of two preset stations with each other.

19 TUNING DOWN/UP button

Used for tuning. Press the "UP" side to tune in to higher frequencies, and press the "DOWN" side to tune in to lower frequencies.

20 TUNING MODE (AUTO/MAN'L MONO) button

Press this button to switch the tuning mode to automatic or manual. To select the automatic tuning mode, press this button so that the "AUTO TUNING" indicator lights up on the display. To select the manual tuning mode, press this button so that the "AUTO TUNING" indicator goes off.

21 DELAY/CENTER/REAR/SWFR button

Whenever pressed, selects the item of changing delay time (DELAY), center speaker output level (CENTER), rear speaker output level (REAR) and subwoofer output level (SWFR) in turn.

* Depending on a mode of this unit, the number of selections differs. For example, when the built-in digital sound field processor (including the Dolby Pro Logic Decoder or the Dolby Digital (AC-3) Decoder) is off, only the item for changing subwoofer output level can be selected.

22 +/- button

Adjusts the level of item selected by pressing the **DELAY/CENTER/REAR/SWFR** button. Moreover, performs setting changes and adjustments for functions selected by pressing the **SET MENU** button.

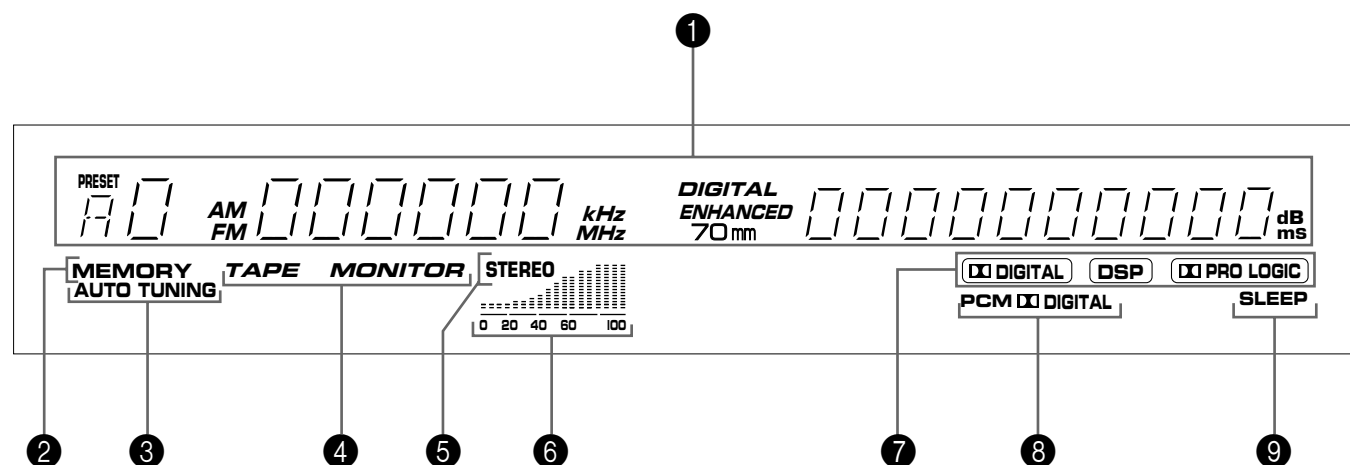
23 SET MENU button

Whenever pressed, selects functions in the SET MENU mode.

24 VIDEO AUX terminals

Connect an auxiliary video or audio input source unit such as a camcorder to these terminals. If the connected video unit has a S video output terminal, connect it to the S VIDEO terminal to obtain a high resolution picture. The source connected to these terminals can be selected by the corresponding input selector button.

DISPLAY PANEL



1 Multi-information display

Displays various information, for example station frequency, preset station number and name of selected input source.

2 MEMORY indicator

When the **MEMORY** button is pressed, this indicator flashes for about 5 seconds. During this period, the displayed station can be programmed to the memory by using the **A/B/C/D/E** button and the preset station number selector buttons.

3 AUTO TUNING indicator

Lights up when this unit is in the automatic tuning mode.

4 TAPE MONITOR indicator

Lights up when the tape deck (or MD recorder etc.) is selected as the input source by pressing the **TAPE/MD MONITOR** button.

5 STEREO indicator

Lights up when an FM stereo broadcast with sufficient signal strength is received.

6 Signal-level meter

Indicates the signal level of the received station. If multipath interference is detected, the indication decreases.

7 ☐ DIGITAL, DSP and ☐ PRO LOGIC indicators

"☐ DIGITAL" lights up when the built-in Dolby Digital (AC-3) Decoder is on and the signals of selected source encoded with the Dolby Digital (AC-3) is not in 2-channels. "DSP" lights up when the built-in digital sound field processor is on, and "☐ PRO LOGIC" lights up when the built-in Dolby Pro Logic Surround Decoder is on. Depending on the selected DSP program, both "☐ DIGITAL" and "DSP", or both "DSP" and "☐ PRO LOGIC" will light up.

8 Digital audio input signal indicators

When digital audio signals not encoded with the Dolby Digital (AC-3) are input to this unit, "PCM DIGITAL" lights up. When digital audio signals encoded with the Dolby Digital (AC-3) are input to this unit, "☐ DIGITAL" lights up.

9 SLEEP indicator

Lights up while the built-in SLEEP timer is functioning.

ADJUSTMENTS BEFORE USING THIS UNIT

SELECTING THE OUTPUT MODES SUITABLE FOR YOUR SPEAKER SYSTEM

This unit provides you the following four functions to determine the method of distributing output signals to speakers suitable for your audio system. When speaker connections are all completed, select a proper position on each function to make the best use of your speaker system.

- 4. CENTER SPEAKER (CNTR)
- 5. REAR SPEAKER (REAR)
- 6. MAIN SPEAKER (MAIN)
- 7. LFE/BASS OUT (BASS)

DESCRIPTION OF EACH FUNCTION

4. CENTER SPEAKER

Choices: NRML/WIDE/PHNTM
Preset position: NRML

NRML (Normal):

Select this position when you use a center speaker that is smaller than the main speakers. In this position, low bass signals (below 90 Hz) at the center channel are output from the main speakers (or the SUBWOOFER OUTPUT terminal if the SMALL position is selected on "6. MAIN SPEAKER" and the SWFR position is selected on "7. LFE/BASS OUT").

WIDE: Select this position when your center speaker is approximately the same size as the main speakers.

PHNTM (Phantom):

Select this position when you do not have a center speaker. The center channel sound will be output from the left and right main speakers.

5. REAR SPEAKER

Choices: SMALL/LARGE
Preset position: SMALL

SMALL: Select this position if your rear speakers do not have a high ability for bass reproduction. In this position, low bass signals (below 90 Hz) at the rear channels are output from the SUBWOOFER OUTPUT terminal (or the main speakers if the MAIN position is selected on "7. LFE/BASS OUT").

LARGE: Select this position if your rear speakers have a high ability for bass reproduction, or a subwoofer is connected to the rear speaker in parallel. In this position, full range signals are output from the rear speakers.

6. MAIN SPEAKER

Choices: SMALL/LARGE
Preset position: LARGE

SMALL: Select this position if your main speakers do not have a high ability for bass reproduction. However, if your system does not include a subwoofer, do not select this position.

In this position, low bass signals (below 90 Hz) at the main channels are output from the SUBWOOFER OUTPUT terminal (if the SWFR or BOTH position is selected on "7. LFE/BASS OUT").

LARGE: Select this position if your main speakers have a high ability for bass reproduction.

In this position, full range signals present at the main channels are output from the main speakers.

7. LFE/BASS OUT

Choices: MAIN/SWFR/BOTH
Preset position: SWFR

MAIN: Select this position if your system does not include a subwoofer.

In this position, full range signals present at the main channels, signals from the LFE channel and other low bass signals that are selected on "4. CENTER SPEAKER" to "6. MAIN SPEAKER" to be distributed from other channels are output from the main speakers.

SWFR/BOTH:

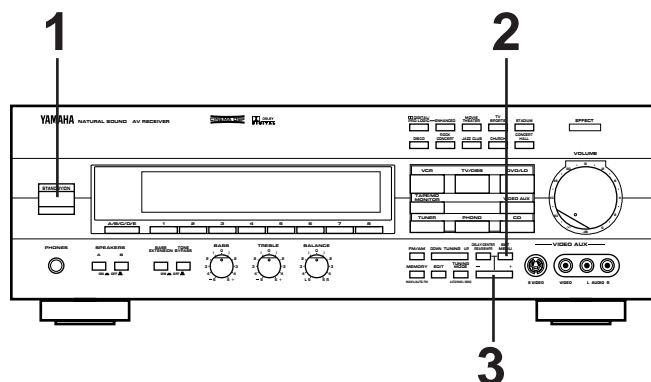
Select either the SWFR or BOTH position if your system includes a subwoofer.

In either position, signals at LFE channel and other low bass signals that are selected on "4. CENTER SPEAKER" to "6. MAIN SPEAKER" to be distributed from other channels are output from the SUBWOOFER OUTPUT terminal.

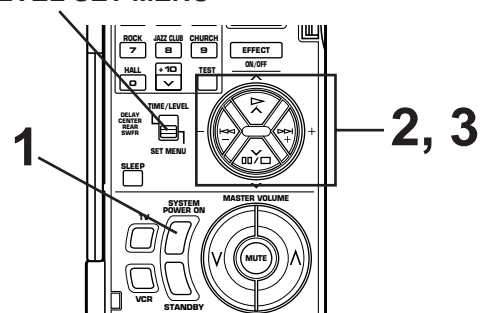
When the LARGE position is selected on "6. MAIN SPEAKER", in the **SWFR** position, no signal is distributed from the main channels to the SUBWOOFER OUTPUT terminal, however in the **BOTH** position, low bass signals from the main channels are output to both of the main speakers and the SUBWOOFER OUTPUT terminal.

METHOD OF CHANGING SELECTIONS

Operations should be made watching information on this unit's display panel or the monitor screen.



TIME/LEVEL-SET MENU



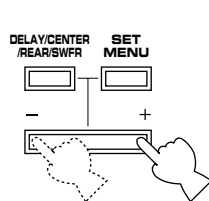
If you will use the remote control transmitter, set the **TIME/LEVEL-SET MENU** switch to the SET MENU position on the remote control transmitter.
Note: Be sure to use the remote control transmitter with the lid open.



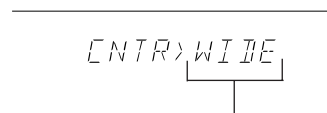
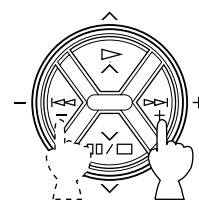
3 Press “+” or “-” once or more so that the arrow points the position you will select.

Front panel

Remote control



or

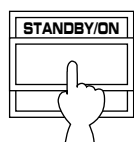


Changes.

1 Turn the power to this unit on. (If you want to display information on the monitor, turn the power to the monitor on.)

Front panel

Remote control



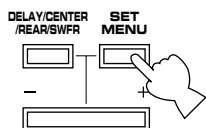
or



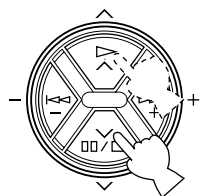
2 Select the title “4. CENTER SPEAKER” by pressing once or more (so that “CNTR” appears on the display).

Front panel

Remote control



or



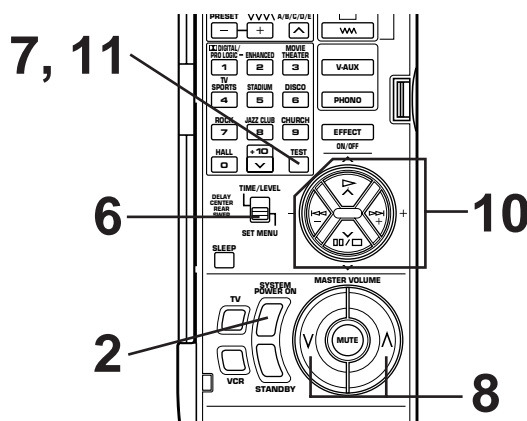
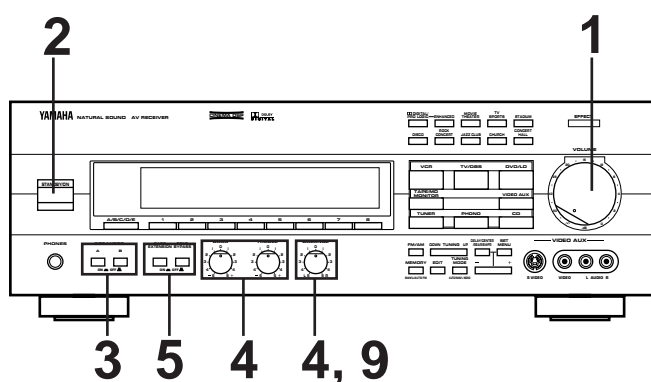
4 Repeat step 2 and 3 to change selections on “5. REAR SPEAKER” (REAR), “6. MAIN SPEAKER” (MAIN) and/or “7. LFE/BASS OUT” (BASS) in the same way.

SPEAKER BALANCE ADJUSTMENT

This procedure lets you adjust the sound output level balance between the main, center, and rear speakers using the built-in test tone generator. When this adjustment is performed, the sound output level heard at the listening position will be the same from each speaker. This is important for the best performance of the digital sound field processor, the Dolby Digital (AC-3) decoder and the Dolby Pro Logic Surround decoder.

The adjustment of each speaker output level should be done at your listening position with the remote control transmitter. Otherwise, the result may not be satisfactory.

Note: Be sure to use the remote control transmitter with the lid open.



1

Front panel

Set to the "∞" position.

2

Turn the power on.

Front panel

or

Remote control

3

Select the main speakers to be used.

Front panel

* If you use two main speaker systems, press both the A and B switches.

4

Front panel

Set to the "0" position.

5

Front panel

Set to the "OFF (⬇)" position.

6

Set the **TIME/LEVEL-SET MENU** switch on the remote control transmitter to the TIME/LEVEL position.

Remote control

7

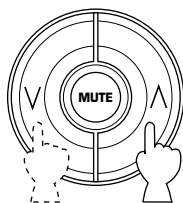
Remote control

→

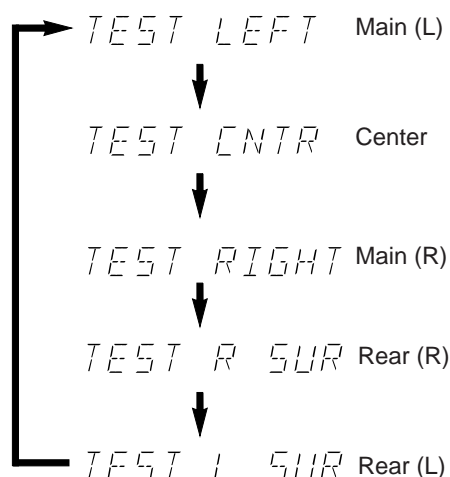
TEST LEFT

8 Turn up the volume.

Remote control



You will hear a test tone (like pink noise) from the left main speaker, then the center speaker, then the right main speaker, then the right rear speaker, and then the left rear speaker, for about two seconds each. The display changes as shown below.



* The state of test-tone output is also shown on the monitor screen by an image of audio listening room. This is convenient for adjusting each speaker level.

* If the function "4. CENTER SPEAKER" in the SET MENU mode is set in the PHNTM (phantom) position, you will hear the center channel test tone from the left and right main speakers.

9 Adjust the **BALANCE** control so that the effect sound output level of the left main speaker and the right main speaker are the same.

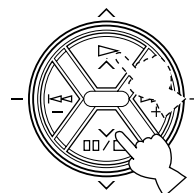
Front panel



10 Adjust the sound output levels of the center speaker and the rear speakers so that they become almost as same as that of the main speakers.

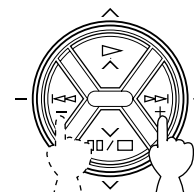
- Press \wedge or \vee once or more so that "CENTER", "R SUR." or "L SUR." appears on the display.
* Select "CENTER" to adjust the output level of the center speaker, select "R SUR." to adjust the output level of the right rear speaker, and select "L SUR." to adjust the output level of the left rear speaker.

Remote control



- Adjust its level.
* Pressing the + side raises and the - side lowers the level.
* While adjusting, the test tone is fixed on the selected speaker.

Remote control



11 Cancel the test tone.

Remote control



→ TEST LEFT
Disappears.

Notes

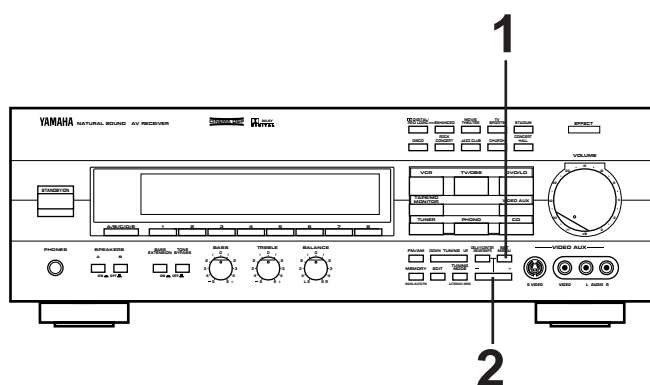
- Once you have completed these adjustments, you can adjust whole sound level on your audio system by using the **VOLUME** control (or the **MASTER VOLUME** keys on the remote control transmitter) only.
- If you use external power amplifiers, you may also use their volume controls to achieve proper balance.
- If the function "4. CENTER SPEAKER" in the SET MENU mode is set in the "PHNTM (phantom)" position, in step 10, the sound output level of the center speaker cannot be adjusted. This is because in this mode, the center sound is automatically output from the left and right main speakers.
- If there is insufficient sound output from the center and rear speakers, you may decrease the main speaker output level by setting the **MAIN LEVEL** switch on the rear panel to "-10 dB".

ADJUSTMENTS IN THE “SET MENU” MODE

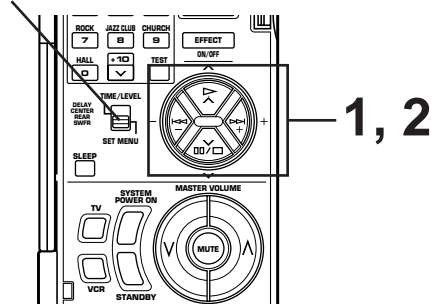
The following eight types of functions maximize the performance of your system and expand your enjoyment for audio listening and video watching.

- | | |
|----------------------------|-------------------------|
| 1. CENTER DELAY (C. DELAY) | 5. REAR SPEAKER (REAR) |
| 2. DYNAMIC RANGE (D. RNG) | 6. MAIN SPEAKER (MAIN) |
| 3. LFE LEVEL (LFE) | 7. LFE/BASS OUT (BASS) |
| 4. CENTER SPEAKER (CNTR) | 8. TV/DBS INPUT (INPUT) |

METHOD OF SETTING CHANGE AND ADJUSTMENT



TIME/LEVEL-SET MENU



Operations should be made watching information on this unit's display panel or the monitor screen. If you want to display information on the monitor, turn the power to the monitor on.

If you will use the remote control transmitter, set the **TIME/LEVEL-SET MENU** switch to the SET MENU position on the remote control transmitter.

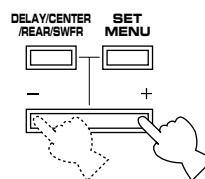
Note: Be sure to use the remote control transmitter with the lid open.



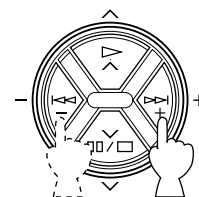
- 2** Select any desired position or edit parameters on the function.

Front panel

Remote control



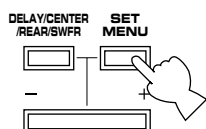
or



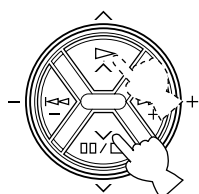
- 1** Press once or more until the title of function on which you will make a change appears on the display.

Front panel

Remote control



or



- 3** Repeat step 1 and 2 to make a setting change or adjustment on any other function.

DESCRIPTIONS OF THE FUNCTIONS

1. CENTER DELAY (Adjusting the delay of center sounds (dialog etc.))

Control range: 0 ms to 5 ms (in 1 ms step)
Preset value: 0 ms

- * This adjustment is effective only when the Dolby Digital (AC-3) is decoded and the signals of selected source encoded with the Dolby Digital (AC-3) contain center-channel signals.

Adjusts the delay between the main sounds (at the main channels) and dialog etc. (at the center channel).
 The larger the value, the later the dialog etc. is generated.

This is for making sounds from the left main, center and right main speakers reach your listening position at the same time by delaying the sound from the center speaker if the distance from the center speaker to your listening position is shorter than the distance from the left or right main speaker to your listening position.

2. DYNAMIC RANGE (Adjusting dynamic range)

Choices: MAX/STD/MIN
Preset position: MAX

- * This adjustment is effective only when the Dolby Digital (AC-3) is decoded.

MAX: "Dynamic range" is the difference between the maximum level and the minimum level of sounds. Sounds on a movie originally designed for movie theaters feature very wide dynamic range. Dolby Digital (AC-3) technology can bring the original sound track into a home audio format with this wide dynamic range unchanged. In this position, a source encoded with the Dolby Digital (AC-3) is reproduced in the original sound track's wide dynamic range providing you with powerful sounds like a movie theater. Selecting this position will be more ideal if you can listen to a source in a high output level in a room specially soundproofed for audio/video enjoyment.

STD (Standard):

Powerful sounds of extremely wide dynamic range are not always suitable for home use. Depending upon the condition of your listening environment, it may not be possible to increase the sound output level as high as a movie theater. However, in a level suitable for listening to in your room, the low level parts of source sound cannot be heard well because they will be lost among noises in your environment.

Dolby Digital (AC-3) technology also made it possible to reduce an original sound track's dynamic range for a home audio format by "compressing" the data of sound.

In this position, a source encoded with the Dolby Digital (AC-3) is reproduced in the "compressed" dynamic range of the source suitable for low level listening.

MIN: In this position, dynamic range is more reduced than in the STD position. Selecting this position will be effective when you must listen to a source in extremely low level.

3. LFE LEVEL (Adjusting the output level at the LFE (low frequency effect) channel)

Control range: -14 dB to 0 dB (in 2 dB step)
Preset value: 0 dB

- * This adjustment is effective only when the Dolby Digital (AC-3) is decoded and the signals of selected source encoded with the Dolby Digital (AC-3) contain LFE signals.

Adjusts the output level at the LFE (low frequency effect) channel. If the LFE signals are mixed with signals at other channels to output them from the same speakers, the ratio of LFE signal level to the level of other signals are adjusted. (See page 6 for details about the LFE channel.)

4. CENTER SPEAKER 5. REAR SPEAKER 6. MAIN SPEAKER 7. LFE/BASS OUT

See pages 22 to 23 for details. (Once you have selected proper modes, you do not have to make a setting change until any alteration is made in your speaker system.)

8. TV/DBS INPUT (Selecting the initial input mode of the sources connected to the TV/DBS input terminals)

For the sources connected to the TV/DBS input terminals of this unit only, you can designate the input mode that is automatically selected when the power of this unit is switched on.

AUTO: In this position, the AUTO input mode is always selected when the power of this unit is switched on.
LAST: In this position, the input mode you have selected last time is memorized and will not be changed even if the power of this unit is switched on.

- * See page 29 for details about switching the input mode.